

**WHAT IS CLAIMED IS:**

1. A method in a data processing system having a program, the method comprising the steps performed by the program of:

asynchronously receiving information about a computer-based system; and

calculating a risk level at which the computer-based system operates based on the received information.

2. The method according to claim 1, further comprising the step of outputting the calculated risk level.

3. The method according to claim 1, further comprising the steps of:  
calculating an exposure level to failure of the computer-based system based on the received information; and

calculating a confidence level of the exposure level,

wherein the risk level is calculated based on the exposure level and confidence level.

4. The method according to claim 3, wherein the risk level is calculated using the formula:

$$\text{risk level} = \text{exposure level} * \text{confidence level} / \text{a mitigating factor},$$

where the mitigating factor is a value associated with the computer-based system.

5. The method according to claim 3, wherein the confidence level is increased each time the exposure level for the computer-based system is calculated and exceeds a predetermined value.

6. The method according to claim 3, wherein a rule engine is used to calculate the exposure level, the rule engine asynchronously receiving the information about the computer-based system as an input, and outputting the exposure level as an output.

7. The method according to claim 6, wherein the rule engine comprises a plurality of rule engines each operating asynchronously; and wherein the risk level is calculated based on the exposure levels output from at least one of the rule engines.

8. The method according to claim 1, wherein the computer-based system is at least one of a data processing system, a component of a data processing system, and a computer program.

5 9. The method according to claim 1, wherein information about the computer-based system is received by subscribing to the information.

10. The method according to claim 1, wherein the risk level is published to a network connected to the data processing system.

10 11. The method according to claim 1, wherein the received information comprises at least one of fault information, hardware configuration information, and software configuration information about the computer-based system.

15 12. The method according to claim 1, further comprising the step of: determining a difficulty value for reducing the exposure level.

13. The method according to claim 12, further comprising the step of: outputting the difficulty value.

20 14. The method according to claim 12, further comprising the step of: determining a cost associated with reducing the exposure level.

25 15. The method according to claim 14, further comprising the step of: outputting the cost.

16. The method according to claim 1, further comprising the steps of:  
calculating at least a second risk level at which the computer-based system operates based on the received information; and  
30 trending the risk level and the at least second risk level by calculating a moving average of the risk levels for the computer-based system.

17. A computer-readable medium containing instructions that cause a data processing system having a program to perform a method comprising the steps performed by the program of:

asynchronously receiving information about a computer-based system; and

5 calculating a risk level at which the computer-based system operates based on the received information.

18. The computer-readable medium according to claim 17, further comprising the step of outputting the calculated risk level.

10 19. The computer-readable medium according to claim 17, further comprising the steps of:

calculating an exposure level to failure of the computer-based system based on the received information; and

15 calculating a confidence level of the exposure level,

wherein the risk level is calculated based on the exposure level and confidence level.

20 20. The computer-readable medium according to claim 19, wherein the risk level is calculated using the formula:

$$\text{risk level} = \text{exposure level} * \text{confidence level} / \text{a mitigating factor},$$

where the mitigating factor is a value associated with the computer-based system.

25 21. The computer-readable medium according to claim 19, wherein the confidence level is increased each time the exposure level for the computer-based system is calculated and exceeds a predetermined value.

30 22. The computer-readable medium according to claim 19, wherein a rule engine is used to calculate the exposure level, the rule engine asynchronously receiving the information about the computer-based system as an input, and outputting the exposure level as an output.

23. The computer-readable medium according to claim 22, wherein the rule engine comprises a plurality of rule engines each operating asynchronously; and wherein the

risk level is calculated based on the exposure levels output from at least one of the rule engines.

24. The computer-readable medium according to claim 17, wherein the computer-based system is at least one of a data processing system, a component of a data processing system, and a computer program.

25. The computer-readable medium according to claim 17, wherein information about the computer-based system is received by subscribing to the information.

26. The computer-readable medium according to claim 17, wherein the risk level is published to a network connected to the data processing system.

27. The computer-readable medium according to claim 17, wherein the received information comprises at least one of fault information, hardware configuration information, and software configuration information about the computer-based system.

28. The computer-readable medium according to claim 17, further comprising the step of:

determining a difficulty value for reducing the exposure level.

29. The computer-readable medium according to claim 28, further comprising the step of:

outputting the difficulty value.

30. The computer-readable medium according to claim 28, further comprising the step of:

determining a cost associated with reducing the exposure level.

31. The computer-readable medium according to claim 30, further comprising the step of:

outputting the cost.

32. The computer-readable medium according to claim 17, further comprising the steps of:

calculating at least a second risk level at which the computer-based system operates based on the received information; and

5 trending the risk level and the at least second risk level by calculating a moving average of the risk levels for the computer-based system.

33. A data processing system comprising:

10 a memory comprising a program that asynchronously receives information about a computer-based system, and calculates a risk level at which the computer-based system operates based on the received information; and

a processing unit that runs the program.

15 34. The data processing system according to claim 33, wherein the program further outputs the calculated risk level.

20 35. The data processing system according to claim 33, wherein the program further calculates an exposure level to failure of the computer-based system based on the received information, and calculates a confidence level of the exposure level, wherein the risk level is calculated based on the exposure level and confidence level.

36. The data processing system according to claim 35, wherein the risk level is calculated using the formula:

risk level = exposure level \* confidence level / a mitigating factor,

25 where the mitigating factor is a value associated with the computer-based system.

37. The data processing system according to claim 35, wherein the confidence level is increased each time the exposure level for the computer-based system is calculated and exceeds a predetermined value.

30 38. The data processing system according to claim 35, wherein a rule engine is used to calculate the exposure level, the rule engine asynchronously receiving the information about the computer-based system as an input, and outputting the exposure level as an output.

39. The data processing system according to claim 38, wherein the rule engine comprises a plurality of rule engines each operating asynchronously; and wherein the risk level is calculated based on the exposure levels output from at least one of the rule engines.

5 40. The data processing system according to claim 33, wherein the computer-based system is at least one of a data processing system, a component of a data processing system, and a computer program.

10 41. The data processing system according to claim 33, wherein information about the computer-based system is received by subscribing to the information.

42. The data processing system according to claim 33, wherein the risk level is published to a network connected to the data processing system.

15 43. The data processing system according to claim 33, wherein the received information comprises at least one of fault information, hardware configuration information, and software configuration information about the computer-based system.

20 44. The data processing system according to claim 33, wherein the program further determines a difficulty value for reducing the exposure level. }

45. The method according to claim 44, wherein the program further outputs the difficulty value.

25 46. The data processing system according to claim 44, wherein the program further determines a cost associated with reducing the exposure level.

47. The data processing system according to claim 46, wherein the program further outputs the cost.

30 48. The data processing system according to claim 33, wherein the program further calculates at least a second risk level at which the computer-based system operates based on the received information, and trends the risk level and the at least second risk level by calculating a moving average of the risk levels for the computer-based system.

49. A data processing system comprising:

means for asynchronously receiving information about a computer-based system; and

means for calculating a risk level at which the computer-based system operates based

5 on the received information.